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EXAMINER	
MILLER, BRANDON J	
ART UNIT	**PAPER NUMBER**
2683	5

DATE MAILED: 02/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/720,514	BILLON, THIERRY	
	Examiner	Art Unit	
	Brandon J Miller	2683	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-36 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-36 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-7, 10-25, and 28-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ranta in view of Chawla.

Regarding claim 1 Ranta teaches a method of selecting the value of at least one radio resource management parameter employed by base station control units of a cellular radio communications network (see pg. 4, lines 30-34 and pg. 5, lines 1-4). Ranta teaches for each base station serving mobile stations in a cell, values are obtained of at least one quantity based on measurements made on radio channels in the cell (see pg. 7, lines 5-12). Ranta teaches the quantity being compared to at least one associated parameter in a procedure for managing the radio resources allocated to the mobile stations (see pg. 7, lines 9-15). Ranta teaches maintaining a statistic of the values obtained for a quantity (see pg. 8, lines 7-14). Ranta teaches adapting the value of an associated parameter for the cell in such a way that, according to the statistic, the values obtained of the quantity are below a threshold value of the associated parameter (see pg. 7, lines 33-36 and pg. 8, lines 1-14). Ranta does not specifically teach adapting the value of an associated parameter in such a way that a fraction of the values obtained of the quantity are greater than the value of the associated parameter. Chawla teaches adapting the value of an associated parameter in such a way that a fraction of the values obtained of the quantity are

greater than the value of the associated parameter (see col. 9, lines 5-9 & 62-67 and col. 10, lines 1-7). It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the device adapt to include adapting the value of an associated parameter in such a way that a fraction of the values obtained of the quantity are greater than the value of the associated parameter because this would allow for more efficient determination of parameters in a wireless communication system.

Regarding claim 2 Ranta teaches a method wherein measurements on radio channels in the cell include measurements of a reception level of radio signals transmitted in at least one direction between the base station and mobile stations (see pg. 3, lines 10-14).

Regarding claim 3 Ranta teaches measurements made on radio channels in the cell include quality measurements of the reception of radio signals transmitted in at least one direction between the base station and mobile stations (see pg. 5, lines 20-25).

Regarding claim 4 Ranta teaches estimating a channel-to-interference ratio at the base station or at each mobile station (see pg. 6, lines 5-8 and pg. 7, lines 2-9).

Regarding claim 5 Ranta teaches measurements made by a mobile station (see pg. 3, lines 10-14).

Regarding claim 6 Chawla teaches measurements that are made by a mobile station, and wherein the estimation of interference at a mobile station includes a reception level by the mobile station, of a signal transmitted by the base station and reception levels, by the same mobile station, of signals transmitted on beacon frequencies by the respective base stations of a set of adjacent cells (see col. 6, lines 4-11 & 25-35).

Regarding claim 7 Ranta and Chawla teaches a device as recited in claim 6 except for a ratio between the level of reception of a signal transmitted by the base station and a sum of the reception levels of the signals transmitted on the beacon frequencies by the base stations of the adjacent cells. Ranta does teach a ratio of the level of reception of a signal transmitted by a base station (see col. 6, lines 5-8). Chawla does teach reception levels of the signals transmitted on the beacon frequencies by the base stations of the adjacent cells (see col. 6, lines 25-31). It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the device adapt to include a ratio between the level of reception of a signal transmitted by the base station and a sum of the reception levels of the signals transmitted on the beacon frequencies by the base stations of the adjacent cells because this would allow for an improved system to differentiate the sources of the signals detected by wireless devices.

Regarding claim 10 Ranta teaches statistics of the values obtained of quantity that are based on first measurements obtained on a dedicated signaling channel for each mobile station spontaneously accessing the cell (see pg. 7, lines 5-8 & 10-11).

Regarding claim 11 Ranta teaches quantity that is compared with an associated parameter in a control procedure of the power transmitted on radio channels allocated to communications between the base station and mobile stations (see pg. 7, lines 33-36 and pg. 8, lines 1-6).

Regarding claim 12 Ranta and Chawla teach a device as recited in claim 11 except for a power control procedure that is such that only the mobile stations for which the value obtained of the quantity is greater than the selected value of a first associated parameter can be subjected to power change, and wherein the determined fraction is of 10 to 20 % for the adaptation of the first parameter. Ranta does teach a power control procedure that is such that only the mobile stations

for which the value obtained of the quantity is below a threshold of a first associated parameter can be subjected to power limitation (see pg. 7, lines 35-36 and pg. 8, lines 1-6). Ranta does teach a 10 to 20% adaptation of a fist parameter (see pg. 8, lines 7-9). It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the device adapt to include a power control procedure that is such that only the mobile stations for which the value obtained of the quantity is greater than the selected value of a first associated parameter can be subjected to power change, and wherein the determined fraction is of 10 to 20 % for the adaptation of the first parameter because this would allow for an improved signal/interference ratio for individual mobile subscribers.

Regarding claim 13 Ranta and Chawla teach a device as recited in claim 12 except for comparing a second associated parameter in an inter-cell handover procedure, wherein the handover procedure is such that the mobile stations for which the value obtained of quantity is lower than the selected value of the second associated parameter are subjected to inter-cell handover, and wherein a determined fraction is lower for the adaptation of the second parameter than for the adaptation of the first parameter. Ranta does teach comparing a second associated parameter in an inter-cell handover procedure, wherein the handover procedure is such that the mobile stations for which the value obtained of quantity is lower than the selected value of the second associated parameter are subjected to inter-cell handover (see pg. 9, lines 3-10). It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the device adapt to include comparing a second associated parameter in an inter-cell handover procedure, wherein the handover procedure is such that the mobile stations for which the value obtained of quantity is lower than the selected value of the second associated parameter are

subjected to inter-cell handover, and wherein a determined fraction is lower for the adaptation of the second parameter than for the adaptation of the first parameter because this would allow for reduced handover and improved signaling capacity in a wireless network.

Regarding claim 14 Ranta teaches comparing to at least one associated parameter in a selection procedure for radio channels allocated to communications between the base station and the mobile stations (see pg. 7, lines 9-15).

Regarding claim 15 Ranta and Chawla teach a device as recited in claim 14 except for a base station that includes a number of transceiver units, one of which transmits on a beacon frequency, and wherein the radio channel selection procedure preferentially allocates channels on the beacon frequency to the mobile stations for which the values obtained for quantity are lower than an associated parameter, the adaptation of which makes use of a determined fraction of the form 100/M %. Ranta does teach a radio channel selection procedure that allocates channels on to the mobile stations for which the values obtained for quantity are lower than an associated parameter (see pg. 8, lines 17-26). Chawla does teach a base station that includes a number of transceiver units, one of which transmits on a beacon frequency and wherein the procedure preferentially allocates channels on the beacon frequency to the mobile stations (see col. 6, lines 4-11 & 25-35). It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the device adapt to include a base station that includes a number of transceiver units, one of which transmits on a beacon frequency, and wherein the radio channel selection procedure preferentially allocates channels on the beacon frequency to the mobile stations for which the values obtained for quantity are lower than an associated parameter, the adaptation of which makes use of a determined fraction of the form 100/M % because this would

allow for an improved system to differentiate the sources of the signals detected by wireless devices.

Regarding claim 16 Ranta and Chawla teach a device as recited in claim 14 except for a base station that includes a number of transceiver units, and wherein the radio channel selection procedure distributes the channels allocated to the mobile stations based on comparisons between the values obtained of a quantity for mobile stations and M-1 associated parameters, the adaptation of which makes use of the respective determined fractions of the form 100xm/M % for 1_< m _< M-1. Ranta does teach a base station that includes a number of transceiver units, and wherein radio channel selection procedure distributes the channels allocated to the mobile stations based on comparisons between the values obtained of a quantity for mobile stations and associated parameters (see pg. 8, lines 16-26). It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the device adapt to include a base station that includes a number of transceiver units, and wherein the radio channel selection procedure distributes the channels allocated to the mobile stations based on comparisons between the values obtained of a quantity for mobile stations and M-1 associated parameters, the adaptation of which makes use of the respective determined fractions of the form 100xm/M % for 1_< m _< M-1 because this would allow for more efficient determination of parameters in a wireless communication system.

Regarding claim 17 Ranta teaches comparing to an associated parameter in an inter-cell or intra-cell handover procedure (see pg. 9, lines 8-14).

Regarding claim 18 Ranta teaches a base station that includes a plurality of transceiver units and wherein the statistic for the values obtained for quantity is maintained separately for

each one of the transceiver units, in order to select independently the values of the associated parameter for the different transceiver units, at least part of the radio resource management procedure being carried out for each one of the transceiver units (see pg. 5, lines 20-29).

Regarding claim 19 Ranta teaches a control unit for at least one base station of a cellular radio communications network (see pg. 9, lines 15-18 and Fig. 4). Ranta teaches performing management procedures of radio resources allocated to communications between the base station and mobile stations in a cell served by a base station (see pg. 4, lines 30-34, col. 5, lines 1-4, and col. 7, lines 5-12). Ranta teaches selecting in accordance with a selection method according to a value of at least one procedure in which values of a quantity obtained from measurements made in the cell on radio channels between the base station and the mobile stations are compared with a parameter (see pg. 7, lines 9-15). Ranta teaches adapting the value of an associated parameter for the cell in such a way that, according to the statistic, the values obtained of the quantity are below a threshold value of the associated parameter (see pg. 7, lines 33-36 and pg. 8, lines 1-14). Ranta does not specifically teach adapting the value of an associated parameter in such a way that a fraction of the values obtained of the quantity are greater than the value of the associated parameter. Chawla teaches adapting the value of an associated parameter in such a way that a fraction of the values obtained of the quantity are greater than the value of the associated parameter (see col. 9, lines 5-9 & 62-67 and col. 10, lines 1-7). It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the device adapt to include adapting the value of an associated parameter in such a way that a fraction of the values obtained of the quantity are greater than the value of the associated parameter because this would allow for more efficient determination of parameters in a wireless communication system.

Regarding claim 20 Ranta and Chawla teach a device as recited in claim 2 and is rejected given the same reasoning as above.

Regarding claim 21 Ranta and Chawla a device as recited in claim 3 and is rejected given the same reasoning as above.

Regarding claim 22 Ranta and Chawla a device as recited in claim 4 and is rejected given the same reasoning as above.

Regarding claim 23 Ranta and Chawla a device as recited in claim 5 and is rejected given the same reasoning as above.

Regarding claim 24 Ranta and Chawla teaches a device as recited in claim 6 and is rejected given the same reasoning as above.

Regarding claim 25 Ranta and Chawla teaches a device as recited in claim 7 and is rejected given the same reasoning as above.

Regarding claim 26 Ranta and Chawla teaches a device as recited in claim 8 and is rejected given the same reasoning as above.

Regarding claim 28 Ranta and Chawla teaches a device as recited in claim 10 and is rejected given the same reasoning as above.

Regarding claim 29 Ranta and Chawla teaches a device as recited in claim 11 and is rejected given the same reasoning as above.

Regarding claim 30 Ranta and Chawla teaches a device as recited in claim 12 and is rejected given the same reasoning as above.

Regarding claim 31 Ranta and Chawla teaches a device as recited in claim 13 and is rejected given the same reasoning as above.

Regarding claim 32 Ranta and Chawla teaches a device as recited in claim 14 and is rejected given the same reasoning as above.

Regarding claim 33 Ranta and Chawla teaches a device as recited in claim 15 and is rejected given the same reasoning as above.

Regarding claim 34 Ranta and Chawla teaches a device as recited in claim 16 and is rejected given the same reasoning as above.

Regarding claim 35 Ranta and Chawla teaches a device as recited in claim 17 and is rejected given the same reasoning as above.

Regarding claim 36 Ranta and Chawla teaches a device as recited in claim 18 and is rejected given the same reasoning as above.

Claims 8-9 and 26-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ranta in view of Chawla and Borst.

Regarding claim 8 Ranta and Chawla teach a device as recited in claim 7 except for a sum that is weighted as a function of colours of the adjacent cells in frequency reuse patterns of a network. Borst teaches a sum that is a function of adjacent cells in frequency reuse patterns of a network (see col. 6, lines 66-67 and col. 7, lines 1-5). It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the device adapt to include a sum that is weighted as a function of colours of the adjacent cells in frequency reuse patterns of a network because this would allow improved channel assignment in cellular telecommunication systems.

Regarding claim 9 Borst teaches measurements made on radio channels in the cell that include measurements of a reception delay, by a base station, of signals transmitted by mobile stations (see col. 4, lines 1-6).

Regarding claim 26 Ranta, Chawla and Borst teach a device as recited in claim 8 and is rejected given the same reasoning as above.

Regarding claim 27 Ranta, Chawla and Borst teach a device as recited in claim 9 and is rejected given the same reasoning as above.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Anderson et al. U.S. Patent No. 6,108,321 discloses interference based dynamic channel assignment.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brandon J Miller whose telephone number is 703-305-4222. The examiner can normally be reached on Mon.-Fri. 8:00 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Trost can be reached on 703-308-5318. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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February 10, 2004

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